

**Joint Research Centre (JRC)**



# **Declaration of Assurance**

## **—**

# **The Expectation Gap**

**Serge VANACKER**

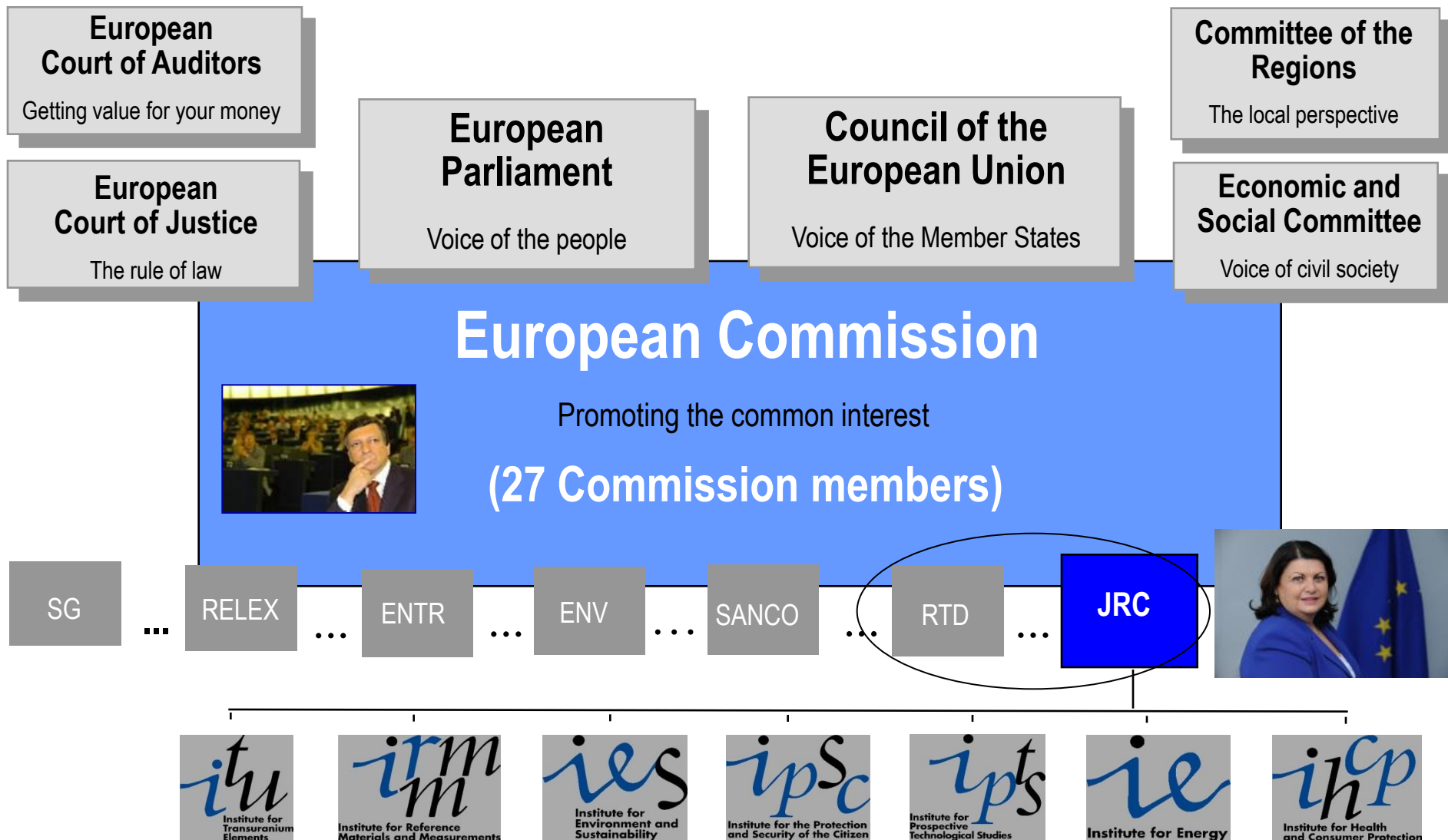
**IPSC - Institute for the Protection and Security of the Citizen**

*Ispira - Italy*

<http://ipsc.jrc.ec.europa.eu/>

<http://www.jrc.ec.europa.eu/>

- **Who is the JRC**
- **Declaration of Assurance  
& the Expectation Gap**
- **Extrapolating Audit Results**
- **Closing the Expectation Gap**



## 7 Institutes in 5 Member States



### IE – Petten, The Netherlands

- Institute for Energy

Staff:  $\approx$  250



### IRMM - Geel Belgium

- Institute for Reference Materials and Measurements

Staff:  $\approx$  345



### ITU - Karlsruhe Germany

- Institute for Transuranium elements

Staff:  $\approx$  325



### IPSC - IHCP - IES - Ispra Italy

- Institute for the Protection and the Security of the Citizen

- Institute for Health and Consumer Protection

- Institute for Environment and Sustainability

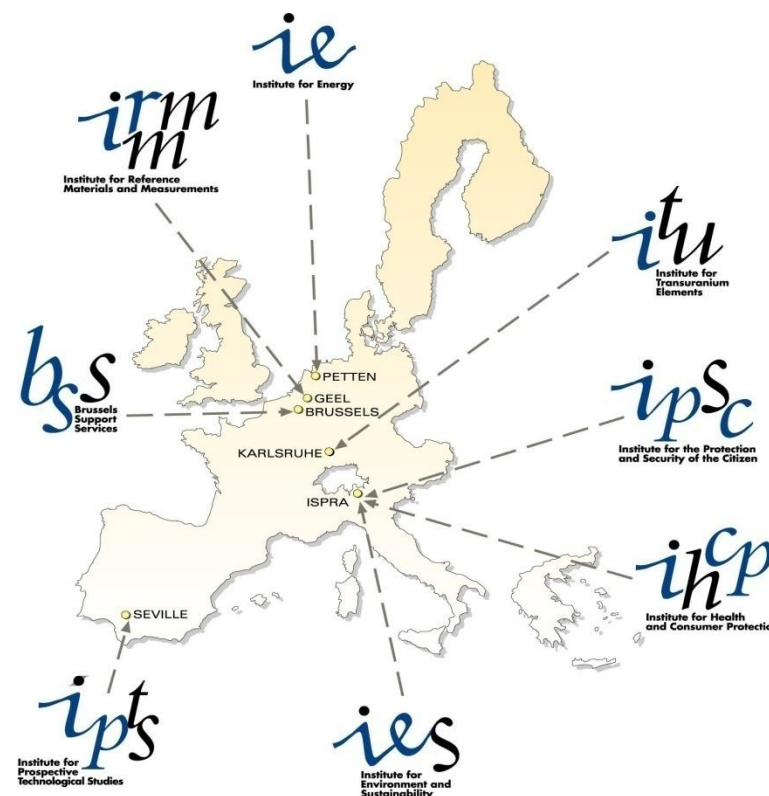
Staff:  $\approx$  425, 320, 450



### IPTS - Seville Spain

- Institute for Prospective Technological Studies

Staff:  $\approx$  170



**Total staff: ~ 2870 people**







... to provide customer-driven scientific and technical support for the conception, development, implementation and monitoring of EU policies.

As a service of the European Commission, the JRC functions as a reference centre of science and technology for the Union.

Close to the policy-making process, it serves the common interest of the Member States, while being independent of special interests, whether private or national.

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- 7 February 1992, enters into force on 1 November 1993
- Created the European Union, led to the introduction of the Euro, and
- Introduced the obligation for the European Court of Auditors to produce an Audit Opinion on the annual consolidated EU accounts.
- Covering the reliability of the accounts and the legality and regularity of the underlying transactions.
- Methodology to be used left at the discretion of the ECA.
- ECA decided to form an opinion supported by a statistical valid method.
- Panel of Statisticians appointed by both ECA and main auditee (EC)
- Methodology retained = Monetary Unit Sampling

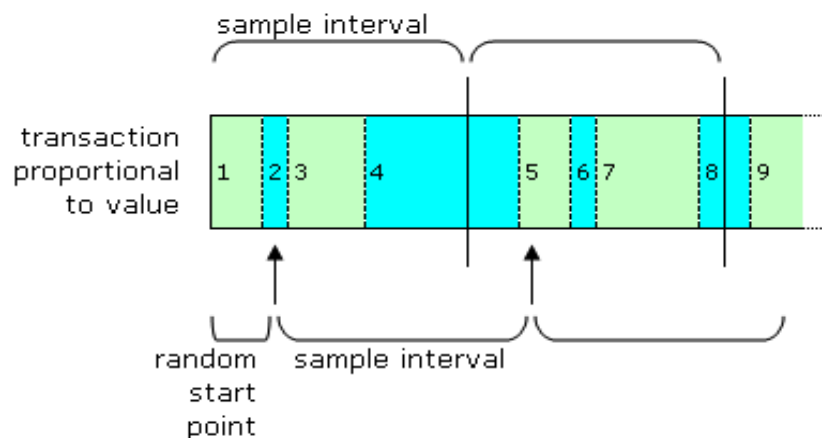
Stakeholder Attitude		Auditor's Opinion	
			
TOTAL population is		OK for all	<u>Alpha risk</u> NOT OK for all
		<u>Beta risk</u> NOT OK for auditor OK for auditee NOT OK for shareholders	OK for auditor NOT OK for auditee NOT OK for shareholders

Shareholder	Auditor
Usually want a more info than the auditors can provide	Have resource problems to provide service



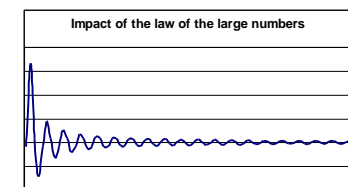
- Expectation by EU citizen – Unqualified Opinion
- Reality – all 15 Opinions (1994-2008) are partially qualified
- Reliability of the accounts was solved after the introduction of a new accounting system and accruals based accounting
- Improvements in the legality and reliability of the underlying transactions was not equal in all areas of expenditure.
- Audit observations grouped by area
- Not very accessible for the EU citizen

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		Amount	Hit-euro
to Member State	5	1.000.000	255.000
to ... (ex. Region)	A B C D ... X Y Z	150.000	5.000
to Final Beneficiary	D1 ... Dx	10.000	5.000

- Audited = 1 transaction per interval
- The error taint of the selected transaction represents the error taint of the whole interval
- Consequence : an over- or under-estimate of the real error taint of the interval
- Solution: select a big sample  
(to take advantage of the law of the large numbers)

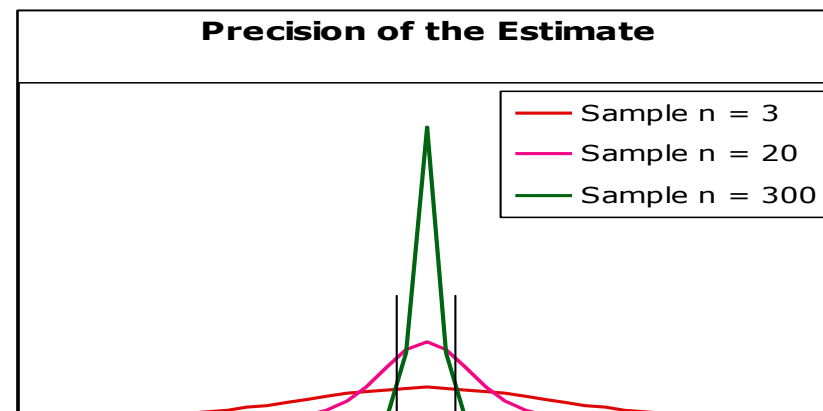
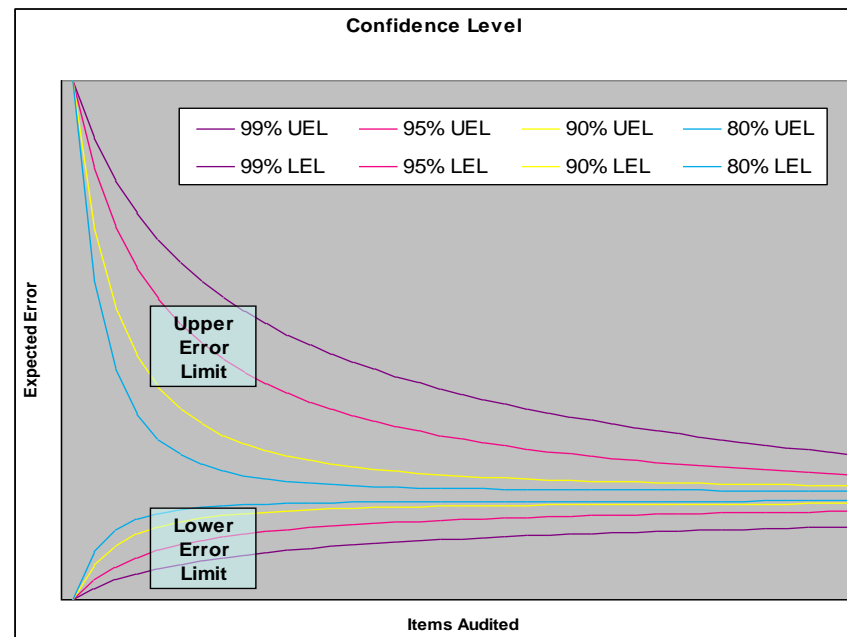


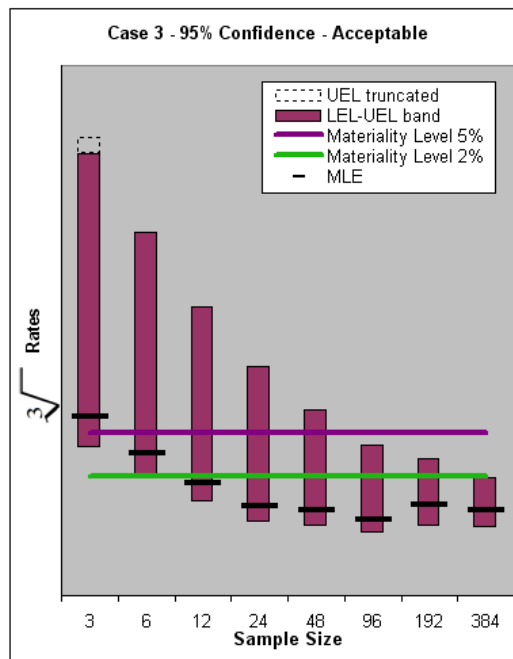
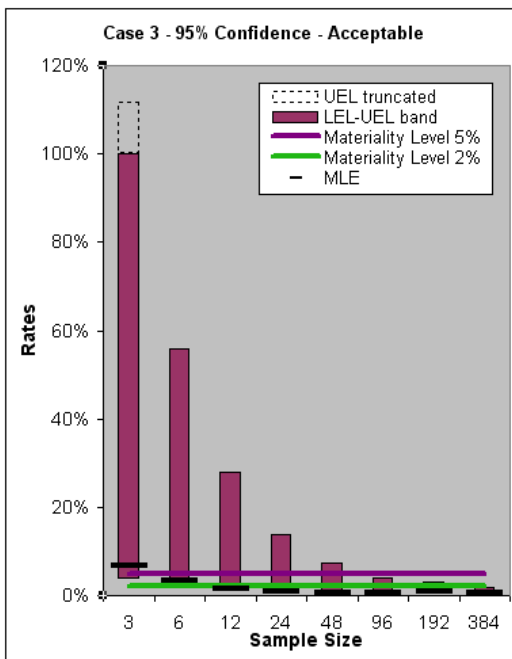
The bandwidth within which we expect the real error to be is defined by the Lower Error Level (LEL) and the Upper Error Level (UEL).

If we want to reduce the gap between UEL & LEL then we have to:

- or reduce the Confidence Level, which increases the Detection Risk.
- or increase the number of items audited

This can also be seen in the following graphs. For a sample size of 3/20/300, the confidence limits are the following:





Sample size	3	6	12	24	48	96	192	384
Errors found	1	1	1	1	2	4	8	15
UEL	100,00%	55,83%	27,92%	13,96%	7,47%	3,96%	2,99%	1,90%
LEL	3,74%	1,87%	0,93%	0,47%	0,38%	0,28%	0,39%	0,36%
MLE	6,67%	3,33%	1,67%	0,83%	0,73%	0,52%	0,88%	0,72%

- Mat. Level 5%: Min. sample = 60
- UEL <<< Materiality Level
- Easy to form an opinion

Mat. Level 2%:  
Min. sample size=150  
in example = 192

- LEL < ML < UEL
- Not possible to form an opinion

## a. Simulate conf.levels (192)

- 80% Conf. = UEL 2,00%
- 75% Conf. = UEL 1,85%

## b. Extend sample size (384)

- 90% Conf. = UEL 1,63%

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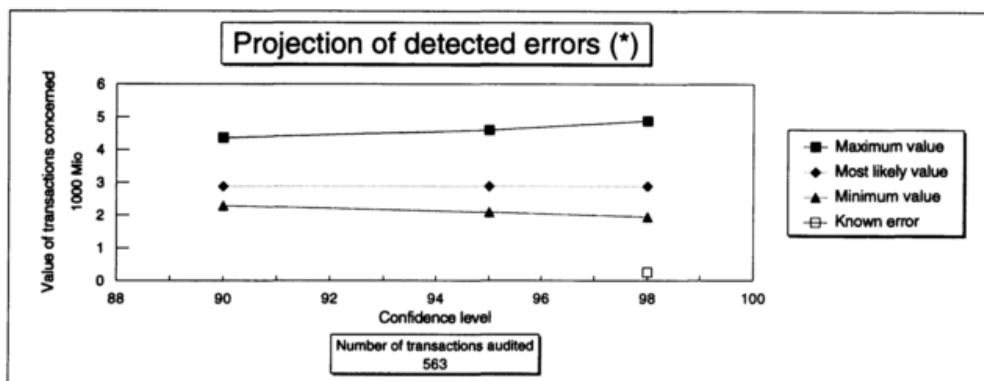
House of Lords – EU Committee  
50th Report of session 2005-06

“Sir John Bourn, Comptroller and Auditor General at the UK’s National Audit Office told us that, **were he required to issue a single Statement of Assurance on the UK Government’s accounts** in the same way as the Court of Auditors does for Europe’s accounts, **he, like the Court, would be unable to do so** (Q 192). This is because last year he issued a qualified opinion on 13 of the 500 accounts of the British Government which he audits (Q 190).”

“We consider that it would be preferable for the Court **to issue statements on each of the spending areas**”

$$\begin{array}{c} = \\ \text{Inherent Risk} \\ \times \\ \text{Control Risk} \\ \times \\ \text{Detection Risk} \end{array}$$



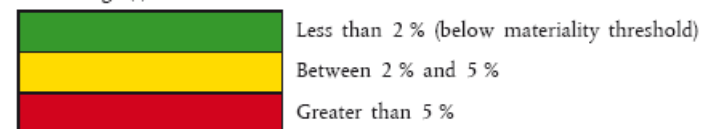


Legend:

Functioning of supervisory and control systems



Error range <sup>(8)</sup>



- Moving away from a single DAS opinion for the whole EU budget
- toward a DAS giving info on different areas
- Gives more useful management information for auditee and shareholder

Table 1.3 — Summary of 2008 DAS results on the legality and regularity of underlying transactions

Specific assessments of the 2008 DAS Annual Report	Paragraphs in Annual Report	Functioning of supervisory and control systems	Error range
Revenue <sup>(1)</sup>	4.29-4.30	Effective	Less than 2 % (below materiality threshold)
Agriculture and natural resources	5.62-5.67	Partially effective <sup>(2)</sup>	Less than 2 % (below materiality threshold)
Cohesion	6.35-6.36	Partially effective <sup>(4)</sup>	Greater than 5 %
Research, energy and transport	7.40-7.41	Partially effective	Between 2 % and 5 %
External aid, development and enlargement	8.33-8.34	Partially effective	Between 2 % and 5 %
Education and citizenship	9.31-9.32	Partially effective	Less than 2 % (below materiality threshold)
Economic and financial affairs	10.27-10.28	Partially effective <sup>(5)</sup>	Between 2 % and 5 % <sup>(6)</sup>
Administrative and other expenditure	11.20-11.21	Effective	Less than 2 % (below materiality threshold)

Assessment of inherent risk	Overall evaluation of supervisory and control systems	Assurance obtained from combined risk assessment	Residual level of substantive testing to be carried out	Minimum degree of confidence to be derived from substantive testing (%)
Not high	Excellent	High controls assurance	Minimum substantive testing	45
	Good	Medium controls assurance	Standard substantive testing	67
	Poor	Low controls assurance	Focussed substantive testing	92
High	Excellent	Medium controls assurance	Standard substantive testing	67
	Good	Medium controls assurance	Standard substantive testing	80
	Poor	Low controls assurance	Focussed substantive testing	95

- Relying less of the audit opinion on substantive testing
- Allows for smaller samples for each individual area
- But is still inflating the necessary overall sample

Confidence Level	Materiality Level			
	1%	2%	5%	10%
99%	461	231	93	47
95%	300	150	60	30
92%	253	127	51	26
80%	161	81	33	17
67%	111	56	23	12
45%	60	30	12	6

$$\text{Minimum Sample size} = \frac{-\text{LN}(1 - \text{confidence level})}{\text{materiality level}}$$

Specific assessments	1994			2007					2008				
	Amount (billion euro)	Sample Size	ASI (million euro) (1)	Amount (billion euro)	Sample Size	ASI (million euro) (1)	Systems (2)	Error range	Amount (billion euro)	Sample Size	ASI (million euro) (1)	Systems (2)	Error range
Agriculture and natural resources				51	196	260			55	204	270		
Cohesion				42	180	233			36,6	170	215		
Research, energy and transport				4,5	180	25			7,5	150	50		
External aid, development and enlargement				6	145	41			6,2	180	34		
Education and citizenship				1,5	150	10			1,7	150	11		
Economic and financial affairs				0,5	55	9			0,6	80	8		
Administrative and other expenditure				8	56	143			8,5	57	149		
<b>Total Expenditure</b>	<b>60,3</b>	<b>563</b>	<b>107</b>	<b>113,5</b>	<b>962</b>	<b>118</b>			<b>116,1</b>	<b>991</b>	<b>117</b>		
Revenue					66					60			

(1) Average Sample Interval = Amount / Sample Size x 1000

(2) Functioning of supervisory and control systems

Sources: Annual Report and Information Notes of ECA for 2007 and 2008  
Statement of Assurance for 1994

Assessment of supervisory and control systems	Range in which the error rate (ER) is situated
Not effective	ER > 5 %
Partially effective	2 % < ER < 5 %
Effective	ER < 2 % (below materiality)

- **Different stakeholders need to understand each others needs and capacities**
- **Both can help each other closing the gap**
- **The shareholder & auditee need to understand the type of assurance the auditor can provide (including value and use of the UEL, LEL and MLE)**
- **The shareholder can decide:**
  - to provide more resources
- **The auditor can evaluate alternative methodologies seeking:**
  - to provide a completer assessment
  - to identify more clearly the problem areas
  - to help the organisation towards a better management
- **Increasing the quality of the accountability**

### **Europa – Gateway to the European Union**

[http://europa.eu/index\\_en.htm](http://europa.eu/index_en.htm)

### **FP7: the future of European Union research policy**

[http://ec.europa.eu/research/fp7/index\\_en.cfm](http://ec.europa.eu/research/fp7/index_en.cfm)

### **JRC**

<http://ec.europa.eu/dgs/jrc/index.cfm>

### **Annual Activity Reports**

[http://ec.europa.eu/atwork/synthesis/aar/index\\_en.htm](http://ec.europa.eu/atwork/synthesis/aar/index_en.htm)

### **European Court of Auditors**

[http://eca.europa.eu/portal/page/portal/eca\\_main\\_pages/home](http://eca.europa.eu/portal/page/portal/eca_main_pages/home)

### **Statement of Assurance (DAS)**

<http://eca.europa.eu/portal/page/portal/audit/StatementofAssurance>

### **EU Press Room**

[http://europa.eu/press\\_room/index\\_en.htm](http://europa.eu/press_room/index_en.htm)

### **JRC Press Releases**

<http://ec.europa.eu/dgs/jrc/index.cfm?id=2300>

### **Dollar-unit Sampling – A Practical Guide for Auditors**

Donald A. Leslie, Albert D. Teitlebaum & Rodney J. Anderson

Pitman Publishing Limited (1980) ISBN 0-273-01449-8

